WX Series

WXS WeatherStation® Multisensor – Ultrasonic Measurement of Wind

Delivering a Compact, Rugged Instrument for Informed Decision-Making

150WXS Multisensor

AIRMAR’s WeatherStation 150WXS provides accurate, site-specific weather data from a single, compact device. As an integral component of a comprehensive weather station, the WeatherStation WXS measures seven critical weather parameters in real-time.

The compact housing features ultrasonic wind measurement, barometric pressure plus a solar radiation shield for increased accuracy of temperature, relative humidity. The maintenance-free qualities of the WeatherStation WXS make it perfect for remote mounting as a network of stationary or deployable sensors.

FEATURES

• Ultrasonic measurement of apparent and true wind speed and direction
• Barometric pressure, air temperature and relative humidity with calculated dew point, heat index and wind chill
• GPS for time stamping and internal compass for true wind data
• Rugged, compact, UV-stabilized housing with no moving parts

Wind Temp BP RH GPS Compass

Ultrasonic Wind Measurement

Solar Stabilization

AIRMAR TECHNOLOGY CORPORATION
NMEA 0183 Sentence Structure
SGPDTM........GPS Datum Reference
SGPGGA........GPS Fix Data
SGGGLL........Geographic Position—Latitude and Longitude
SGGPSSS........GNSS DOP and Active Satellite
SGGPSSV...........Satellites in View
SGPRMC..........Recommended Minimum GNSS
SGGVTG.........COG and SOG
SGPZDA........Time and Date
SHCHDG............Heading, Deviation, and Variation
SHCHDRT........True Heading
SHCHTHS...........True Heading and Status
STIROT...........Rate of Turn
SWMDA........Meteorological Composite
SWMDW........Wind Direction and Speed
SWMDV........Wind Speed and Angle
SWMWR........Relative Wind Direction and Speed
SWMWT........Theoretical Wind Direction and Speed
SYXDR........Transducer Measurements

NMEA2000® Output Message Structure
59392........ISO Acknowledgement
060928........ISO Address Claim
126208........Acknowledge Group Function
126464........PGN List
126992........System Time
126996........Product Information
126998...........Configuration Information
127250........Vessel Heading
127251........Rate of Turn
127257........Attitude
127258........Magnetic Variation
129025........Position and Rapid Update
129026........COG and SOG, Rapid Update
129029........GNSS Position Data
129033........Time and Date
129044........Datum
129538........GNSS Control Status
129539........GNSS DOPs
129540........GNSS Sat in View
130306........Wind Data
130310........Environmental Parameters
130311........Environmental Parameters
130312........Temperature
130313........Humidity
130314........Actual Pressure
130323........Meteorological Station Data

DATA OUTPUT PROTOCOL

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- **SHCHDG**: Heading, Deviation, and Variation
- **SHCHDRT**: True Heading
- **SHCHTHS**: True Heading and Status
- **STIROT**: Rate of Turn
- **SWMDA**: Meteorological Composite
- **SWMDW**: Wind Direction and Speed
- **SWMDV**: Wind Speed and Angle
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- **SYXDR**: Transducer Measurements

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**SPECIFICATIONS**

- **Wind Speed Range**: 0 MPH to 90 MPH, 0 m/s to 40 m/s
- **Wind Speed Resolution**: 0.1 MPH, 0.1 m/s
- **Wind Speed Accuracy @ 0°C to 55°C (32°F to 131°F), no precipitation**: Low Wind Speeds: 0 MPH to 11.5 MPH: 0.1 MPH + 10% of reading
- **Wind Speed Accuracy in wet conditions**: High Wind Speeds: 11.5 MPH to 90 MPH: 2.3 MPH or 5%, whichever is greater
- **Wind Direction Accuracy**: 0° to 360°
- **Wind Direction Resolution**: 0.1°
- **Wind Direction Accuracy in wet conditions**: 0° to 360°
- **Wind Speed Accuracy in wet conditions**: RMS—Root Mean Square

- **Air Temperature Accuracy**: ±0.1°C (±2°F) @ >4.6 MPH wind, >2 m/s wind
- **Ambient Temperature Accuracy**: ±5% units RH when altitude correction is available
- **Relative Humidity Range**: 10% to 95% RH
- **Relative Humidity Accuracy**: ±5% units RH
- **GPS Position Accuracy**: 3 m (10') with WAAS/EGNOS (95% of the time)
- **Operating Temperature Range**: -25°C to 55°C (-3°F to 131°F)
- **Supply Voltage**: 9 VDC to 40 VDC
- **Supply Current (@ 12 VDC)**: 1 A
- **Weight**: 566 grams (1.25 lb)

**Certifications and Standards**

- IEC60950_1C, IEC60950_22A, EN55022, EN55024, EN15014982
- CE, IPX6 (Relative Humidity/IPX4), RoHS, IEC61000-4-2, IEC60945
- IEC60950_1C, IEC60950_22A, EN55022, EN55024, EN15014982

- **RMS—Root Mean Square**
  *When the wind speed is less than 2 m/s (4.6 MPH) and/or air temperature is below 0°C (32°F), wind, temperature, and relative humidity readings will be less accurate.

- **Wet conditions include moisture, rain, frost, dew, snow, ice and/or sea spray in the wind channel.**

- **AIRMAR has made the address claiming modifications to enable compatibility with the ISO 11783 communication protocol for the agriculture industry – that is based on the SAE J1939 protocol.**